

REMARKS

Withdrawal of the finality of the last Office Action and formal acceptance of the above amendments as a submission in connection with U.S. PTO RCE practice is respectfully requested. Moreover, reconsideration and allowance of the above-identified application, as currently amended, is also respectfully requested.

By the above-made amendments, the set forth featured aspect previously recited in the "wherein" clause at the end of claim 7, namely, that the "bias supply line" comprises a low pass filter which brings attenuation to a radio frequency signal leaking from the radio frequency power amplifier part to the bias control part, is now contained, instead, in independent claim 1. Moreover, since the structural details of the "bias supply line" previously contained in the "wherein" clause of claim 1, it is submitted, are unnecessary for purposes of patentability of the invention according to claim 1, as now amended, such structural details are now contained, instead, in claim 7. The remaining portion of original claim 7 has been deleted so as to avoid a duplication with that now existing in amended claim 1. Moreover, the set forth featured aspect calling for "a bias supply line for supplying the bias voltage from said bias control part to said radio frequency power amplified part" has been further defined such that it specifically calls for the bias supply line to be connected between the radio frequency power amplifier part and the bias control part. In this regard, using the example embodiments of the present application as a showing thereof, although not limited thereto, the bias supply line 108 or 109 connects the bias control

part 104 and the radio frequency power amplifier part 103 (see page 7, lines 5-7, of the specification).

The invention now set forth according to independent claim 1 is a radio frequency amplified module comprising a module substrate, a radio frequency power amplifier part which is arranged on the module substrate and amplifies a power of a radio frequency signal, a bias control part which is arranged on the module substrate and controls operation of the radio frequency power amplifier part with a bias voltage, and a bias supply line for supplying the bias voltage from the bias control part to the radio frequency power amplifier part, the bias supply line being connected between the radio frequency power amplifier part and the bias control part, wherein the bias supply line comprises a low pass filter which brings attenuation to a radio frequency signal leaking from the radio frequency power amplifier part to the bias control part. It is submitted, the invention as now set forth in claim 1 was neither described nor could have been suggested in view of Heal et al (U.S. Patent 5,973,567). It is submitted, also, the invention according to the dependent claims thereof, i.e., claims 2-5, 7 and 8, was not disclosed nor could have been suggested from Heal et al's disclosure. Supportive discussion regarding this is provided below.

Regarding the previously standing rejection of claims 1-6, under 35 U.S.C. §102, as being, allegedly, anticipated by Miyazawa (U.S. Patent 6,456,125), it has been rendered moot in view of the amendments made to base claim 1. That is, the set forth featured aspects previously contained in original claim 7 are now featured in amended claim 1, along with an additional further defining structural aspect directed to the "bias supply line", which is discussed

above. In the Final Office Action, it is noted that the basis for the rejection to original claim 7 was in view of the alleged applicability of Heal et al's disclosure. However, as will be shown below, the invention according to independent claim 1, as now amended, and also according to the corresponding dependent claims thereof, could not have been anticipated nor rendered obvious in view of Heal et al. Therefore, insofar as presently applicable, any such rejection of the currently amended claims in view of Heal et al is traversed and withdrawal of the same is respectfully requested.

Incidentally, dependent claim 6 has been cancelled and is being newly presented as claim 8, which is dependent on claim 7. This change was effected so as to avoid any proper antecedent concerns in view of the amendments made to claim 1.

Heal et al's disclosure features a tunable impedance matching network for a MIC (Microwave Integrated Circuit) power amplifier module. In this regard, Heal et al's construction features an output impedance matching network 69 which is located between FET Q1 (Q1a, Q1b) and the output transmission line 68, such as shown in Fig. 7 thereof. The output matching network 69 of Heal et al includes the bonding wires 71a-p forming an inductor and the bonding pad capacitance or output power combiner 64 capacitance, and is connected via the additional bonding wires 76a-p and the additional bonding pads 70 between the FET Q1 drain and the output transmission line 68 (see Figs. 5-7). In Heal et al, the bond wires are used to accommodate the input signal plus the DC bias current on the drain side of the FET. The result of this is that the input signal is able to pass through the matching network

69 to the output transmission line 68 with reduced losses. (Column 3, line 66, to column 4, line 4, of Heal et al.)

It is submitted, the low pass filter of the present invention differs from the low pass output matching network of Heal et al's MIC power amplifier module in both the arrangement thereof as well as in the resulting operation/action. If the low pass output impedance network 69 of Heal et al were to bring about an attenuation of the input signal, the effectiveness of the power amplifier according to Heal et al, it is submitted, cannot be realized. It is submitted, the "bias supply line" as that now set forth in base claim 1 is not an impedance matching network in the sense of that taught in Heal et al but, rather, is a low pass filter that is not connected to the radio frequency signal output port (RF OUT) but is connected between the radio frequency power amplifier part and the bias control part. It therefore can be said that the radio frequency signal from the radio frequency amplifier part (e.g. 103) to the bias control part (e.g. 104) is sufficiently attenuated to be blocked. It is submitted, a radio frequency amplifier module which calls for the placement of a bias supply line in the manner as that now set forth and which comprises a low pass filter which brings about attenuation to a radio frequency signal leaking from the radio frequency power amplifier part to the bias control part, as that now set forth in base claim 1, was neither disclosed nor could have been realizable in view of Heal et al.

For the same or similar reasons as that noted above, the invention according to dependent claims 2-5 also could not have been anticipated nor suggested from Heal et al's teachings. Regarding the further limiting aspects set forth in the dependent claims, examples thereof, although not limited thereto, can be seen with

regard to various ones of the disclosed embodiment. Regarding claims 2 and 3, both of which are dependent on base claim 1, the showings in Figs. 6 and 7 of the drawings are example illustrations thereof, respectively (see also the discussion on page 9, line 21, *et seq.* and on page 10, line 6, *et seq.* of the present specification). Regarding claim 4, which is also dependent on claim 1, the invention calls for the RF power amplifier part (e.g. 103) and the bias control part (e.g. 104) to be constituted as a semiconductor integrated circuit formed on the same semiconductor substrate and for the bias supply line (e.g. 108, 109) to likewise be formed on the semiconductor substrate (see page 9, lines 11-15, of the specification). Regarding claim 8 (dependent on claim 7), the example showings in Fig. 8, although not limited thereto, and the discussion on page 10, lines 16, *et seq.*, of the present specification, are applicable thereto. Regarding the featured "bias supply line" of the present invention, an example discussion of a low pass filter which brings attenuation to a radio frequency signal leaking from the RF power amplifier part to the bias control part is given with regard to the equivalent circuit shown in Fig. 3, *et seq.* and the example physical structure directed thereto which can also be seen with regard to Fig. 2, *et seq.* of the drawings, although not limited thereto.

In accordance with such a scheme as that presently set forth in independent claim 1 and also according to the corresponding dependent claims thereof, the low pass filter associated with the set forth "bias supply line" can bring about sufficient attenuation to a RF signal that passes through, for example, a stitched structure inductance, such as shown in Fig. 1 as well as with regard to other ones of the exemplified disclosed embodiments, although not limited thereto. Such a structure

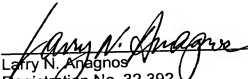
and operation thereof in connection with a RF power amplifier module is clearly defining over that according to Heal et al, both in its arrangement and its action.

Therefore, in view of the above-amendments, together with these accompanying Remarks, reconsideration and withdrawal of the outstanding rejections, as well as favorable action on the current pending claims and an early formal notification of allowance of the above-identified application is respectfully requested.

To the extent necessary, Applicants petition for an extension of time under 37 C.F.R. §1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (520.43783X00) and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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Attachments

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